

What is claimed is:

1 1. A method for facilitating robust revision control of components of a system, the
2 method comprising:
3 storing a plurality of system components under revision control in a master
4 repository, according to internal names;
5 storing, under revision control in the master repository, a binding between the
6 internal name of each of the plurality of system components and its
7 corresponding external name;
8 storing, under revision control in the master repository, attributes concerning
9 system components;
10 storing, in the master repository, a journal of operations performed on system
11 components;
12 responsive to a user performing an operation on at least one system component
13 according to its external name, updating the journal accordingly; and
14 responsive to a user indication, updating the revision control system to include a
15 new version of its contents reflecting a change-set of operations consisting
16 of all operations performed by the user on system components since a
17 previous indication from the user.

1 2. The method of claim 1 wherein updating the revision control system to include a new
2 version of the system components further comprises:
3 reading the journal to determine which operations have been performed by the
4 user on system components since the previous indication from the user;

5 determining the internal names of affected system components;
6 updating affected system components in the revision control system according to
7 the user performed operations;
8 updating the journal to reflect processing of the user indication; and
9 associating a new version number with a resulting state of the revision control
10 system.

1 3. The method of claim 2 wherein updating the revision control system to include a new
2 version of the system components further comprises:
3 updating the stored bindings to reflect at least one change to at least one external
4 name of at least one affected system component made by at least one user
5 operation.

1 4. The method of claim 2 wherein updating the revision control system to include a new
2 version of the system components further comprises:
3 updating the stored attributes to reflect at least one change to at least one attribute
4 concerning at least one affected system component made by at least one
5 user operation.

1 5. The method of claim 2 wherein updating the revision control system to include a new
2 version of the system components further comprises:
3 modifying the affected system components in the master repository to reflect the
4 performed user operations.

1 6. The method of claim 1 wherein storing a plurality of system components further
2 comprises:

3 storing at least one system component from a group of system components
4 consisting of:
5 a symbolic link;
6 a file; and
7 a directory.

1 7. The method of claim 1 wherein storing attributes concerning system components
2 further comprises:

3 storing at least one attribute concerning at least one system component from a
4 group of attributes consisting of:
5 a deletion indicator;
6 an owner;
7 a group;
8 a type;
9 a version number;
10 a mode; and
11 security settings.

1 8. The method of claim 1 further comprising:

2 storing, in the master repository, a indication of a next available internal name;
3 and

4 updating the indication accordingly as internal names are assigned to system
5 components.

1 9. The method of claim 1 further comprising:

2 providing at least one user with a user working area, each user working area
3 comprising a working copy of the master repository, in which a user can
4 perform operations on system components; and
5 only providing users access to system components in user working areas,
6 according to their external names.

1 10. The method of claim 9 wherein storing a binding between the internal name a system
2 component and its corresponding external name further comprises:

3 storing a binding between a constant number used to refer to the system
4 component in the revision control system and a variable character string
5 used to refer the system component by at least one user, in at least one
6 user working area.

1 11. The method of claim 9 wherein updating the revision control system to include a new
2 version of the system components reflecting a change-set further comprises:

3 synchronizing the user working area from which the user made the indication with
4 the master repository.

1 12. The method of claim 9 wherein responsive to a user performing an operation on at
2 least one system component according to its external name, updating the journal accordingly
3 further comprises:

4 updating the journal to indicate to indicate that the user has performed an
5 operation on at least one system component from a group of operations
6 consisting of:
7 adding at least one system component to the master repository;
8 backing a change-set out of the master repository;
9 changing a group of at least one system component;
10 changing a mode of at least one system component;
11 changing an owner of at least one system component;
12 adding a comment concerning at least one journal entry;
13 editing at least one system component;
14 modifying linking information concerning at least one system component;
15 deleting at least one system component from the master repository;
16 un-deleting at least one system component in the master repository;
17 renaming at least one system component; and
18 undoing at least one earlier performed user operation.

1 13. The method of claim 9 further comprising:

2 responsive to a request from a user in a working area, providing the user with data
3 from a group of data consisting of:
4 at least one entered change-set;
5 differences between two versions of a system component;
6 information concerning at least one system component;
7 a location of the user's working area;
8 a listing of system components currently checked out for editing;

9 a requested revision of a system component; and
10 a path to a root of the master repository.

1 14. The method of claim 9 further comprising:
2 responsive to a user request, synchronizing the user working area from which the
3 user made the request with the master repository.

1 15. The method of claim 9 further comprising:
2 requiring a user to check a system component out of the master repository for
3 editing before performing a modifying operation on the system
4 component.

1 16. A computer readable medium containing a computer program product for facilitating
2 robust revision control of components of a system, the computer program product comprising:
3 program code for storing a plurality of system components under revision control
4 in a master repository, according to internal names;
5 program code for storing, under revision control in the master repository, a
6 binding between the internal name of each of the plurality of system
7 components and its corresponding external name;
8 program code for storing, under revision control in the master repository,
9 attributes concerning system components;
10 program code for storing, in the master repository, a journal of operations
11 performed on system components;

12 program code for, responsive to a user performing an operation on at least one
13 system component according to its external name, updating the journal
14 accordingly; and
15 program code for, responsive to a user indication, updating the revision control
16 system to include a new version of its contents reflecting a change-set of
17 operations consisting of all operations performed by the user on system
18 components since a previous indication from the user.

1 17. The computer program product of claim 16 wherein the program code for updating
2 the revision control system to include a new version of the system components further
3 comprises:
4 program code for reading the journal to determine which operations have been
5 performed by the user on system components since the previous indication
6 from the user;
7 program code for determining the internal names of affected system components;
8 program code for updating affected system components in the revision control
9 system according to the user performed operations;
10 program code for updating the journal to reflect processing of the user indication;
11 and
12 program code for associating a new version number with a resulting state of the
13 revision control system.

1 18. The computer program product of claim 17 wherein the program code for updating
2 the revision control system to include a new version of the system components further
3 comprises:

4 program code for updating the stored bindings to reflect at least one change to at
5 least one external name of at least one affected system component made
6 by at least one user operation.

1 19. The computer program product of claim 17 wherein the program code for updating
2 the revision control system to include a new version of the system components further
3 comprises:

4 program code for updating the stored attributes to reflect at least one change to at
5 least one attribute concerning at least one affected system component
6 made by at least one user operation.

1 20. The computer program product of claim 17 wherein the program code for updating
2 the revision control system to include a new version of the system components further
3 comprises:

4 program code for modifying the affected system components in the master
5 repository to reflect the performed user operations.

1 21. The computer program product of claim 16 further comprising:

2 program code for providing at least one user with a user working area, each user
3 working area comprising a working copy of the master repository, in
4 which a user can perform operations on system components; and

5 program code for only providing users access to system components in user
6 working areas, according to their external names.

1 22. The computer program product for claim 21 wherein the program code for updating
2 the revision control system to include a new version of the system components reflecting a
3 change-set further comprises:

4 program code for synchronizing the user working area from which the user made
5 the indication with the master repository.

1 23 The computer program product for claim 21 further comprising:

2 program code for requiring a user to check a system component out of the master
3 repository for editing before performing a modifying operation on the
4 system component.

1 24. A computer system for facilitating robust revision control of components of a
2 system, the computer system comprising:

3 a software portion configured to store a plurality of system components under
4 revision control in a master repository, according to internal names;

5 a software portion configured to store, under revision control in the master
6 repository, a binding between the internal name of each of the plurality of
7 system components and its corresponding external name;

8 a software portion configured to store, under revision control in the master
9 repository, attributes concerning system components;

10 a software portion configured to store, in the master repository, a journal of
11 operations performed on system components;

12 a software portion configured to, responsive to a user performing an operation on
13 at least one system component according to its external name, update the
14 journal accordingly; and
15 a software portion configured to, responsive to a user indication, update the
16 revision control system to include a new version of its contents reflecting a
17 change-set of operations consisting of all operations performed by the user
18 on system components since a previous indication from the user.

1 25. The computer system of claim 24 wherein the software portion configured to update
2 the revision control system to include a new version of the system components further
3 comprises:
4 a software portion configured to read the journal to determine which operations
5 have been performed by the user on system components since the previous
6 indication from the user;
7 a software portion configured to determine the internal names of affected system
8 components;
9 a software portion configured to update affected system components in the
10 revision control system according to the user performed operations;
11 a software portion configured to update the journal to reflect processing of the
12 user indication; and
13 a software portion configured to associate a new version number with a resulting
14 state of the revision control system.

1 26. The computer system of claim 25 wherein the software portion configured to update
2 the revision control system to include a new version of the system components further

3 comprises:

4 a software portion configured to update the stored bindings to reflect at least one
5 change to at least one external name of at least one affected system
6 component made by at least one user operation.

1 27. The computer system of claim 25 wherein the software portion configured to update
2 the revision control system to include a new version of the system components further

3 comprises:

4 a software portion configured to update the stored attributes to reflect at least one
5 change to at least one attribute concerning at least one affected system
6 component made by at least one user operation.

1 28. The computer system of claim 25 wherein the software portion configured to update
2 the revision control system to include a new version of the system components further

3 comprises:

4 a software portion configured to modify the affected system components in the
5 master repository to reflect the performed user operations.

1 29. The computer system of claim 24 further comprising:

2 a software portion configured to provide at least one user with a user working
3 area, each user working area comprising a working copy of the master

4 repository, in which a user can perform operations on system components;
5 and
6 a software portion configured to only provide users access to system components
7 in user working areas, according to their external names.

1 30. The computer system of claim 29 wherein the software portion configured to update
2 the revision control system to include a new version of the system components reflecting a
3 change-set further comprises:

4 a software portion configured to synchronize the user working area from which
5 the user made the indication with the master repository.

1 31 The computer system of claim 29 further comprising:

2 a software portion configured to require a user to check a system component out
3 of the master repository for editing before performing a modifying
4 operation on the system component.